

San Timoteo
Cuba

1994

File: San Timoteo
Creek

SAN TIMOTEO CREEK REACH 4 GENERAL ASSESSMENT - January 6, 1994

Wanda Smith and Allan Bacon

The purpose of the assessment was to establish whether San Timoteo Reach 4 was flowing or dry. We determined that at the least, the lower half of Reach 4 was flowing.

All stops are referenced on the attached map.

STOP 1: Hwy. 60 @ dead end street (street intersecting Jack Rabbit Trail). Pictures taken of an unnamed tributary to San Timoteo Creek. Suspected that this is the tributary which the City of Beaumont discharges its effluent to.

Water flowing under Hwy. 60 bridge; has an odor and appearance of effluent. Water is also slightly murky and musty. cfs \approx 3 - 4?

STOP 2: Photo(s) of Noble Creek @ 14th St. in Beaumont.

STOP 3: Photo(s) of probable confluence of Noble, Little San Gorgonio, and San Timoteo Creeks. There was only a dry wash with coastal scrub and cottonwood trees.

STOP 4: San Timoteo Creek photo(s)

Traveled west on San Tim. Canyon Rd., RXR crossing on south side. Crossed railroad tracks @ RXR crossing sign off San Timoteo Canyon Road.

Definite flow in San Timoteo Creek. Flow is clear, probably combined flow consisting of irrigation flows (at this location, an agricultural field is located directly north of the creek) and effluent discharged from Beaumont. Fair amount of riparian vegetation located along the corridor, including several trees and an invasion of arundo. cfs \approx 3 - 4

STOP 5: Intersection of San Timoteo Canyon Road bridge and San Tim Creek.

River clear, less cfs flow - maybe 2. Perhaps best spot to establish Reach 4's flow as it is readily accessible and very open. A fair amount of riparian growth, as well as an invasion of arundo, was noted.

STOP 6: 30260/30240 San Timoteo Canyon Road (private road access).

San Tim Creek flows across a private road at this location. The flow was clear and even greater than at the upstream locations. In addition, a larger area of riparian habitat is supported by the flows.

Stop 6 was the last stop in which we were relatively certain we were still located in Reach 4. Upon continuing to travel westbound on San Timoteo Canyon Road, we intersected Redlands Blvd.

MEMORANDUM

Date: November 1, 1994
From: Allan Bacon
To: Keith Pearson, Planning Files
Subject: San Timoteo Creek Sampling on August 26, 1994

Purpose

San Timoteo Creek was sampled on August 26, 1994 as part of the Planning Sections Ambient sampling. In addition our Permitting Section recently recommended 401 certification for the Army Corps of Engineers for lining the creek, so current water quality data was desired. The sampling was performed by Brad Nelson of the Land Disposal Section, Wanda Smith and Allan Bacon of the Planning Section.

A total of three locations were sampled. The locations were chosen based on their representativeness and proximity to the proposed lining project. Two samples (ST-1 and ST-2) were in the section proposed for lining. The third location (ST-3) is upstream of the proposed lining. In addition the third location had been previously sampled. In all locations nutrients, standard minerals, and bacteria were analyzed for, and at ST-2 a 608 series (pesticides) was run.

Sampling Locations

ST-1 San Timoteo Creek At Waterman Ave.

This location was just upstream of San Timoteo Creek's confluence with the Santa Ana River. The creek bed in this area is maintained by San Bernardino County Flood Control, and is posted with a No Trespassing sign. The bed of the creek was covered with thick green vegetation. The sides of the creek are sloped and the flood control district has used several constructed attempts to keep erosion and other slope changes to a minimum, including chain link fencing, aluminum sheeting and loss rock riprap.

Sampling results show violations of four basin plan objectives. Sodium was measured at 65 mg/l exceeding the 60 mg/l objective. Sulfate was measured at 73 mg/l exceeding the 45 mg/l objective. Total dissolved solids (TDS) was measured at 397 mg/l exceeding the 290 mg/l objective. Hardness was measured at 200 mg/l exceeding the 175 mg/l objective.

ST-2 San Timoteo Creek at San Timoteo Canyon Road.

This location was different from ST-1 in that the riparian growth did not cover the width of the channel, rather, flow was very low and the riparian area was located adjacent to the water. The flow in this portion originated from a pipe that connects a side area to the main channel. There was no water in the main channel upstream of the discharge. The divided area may be San Timoteo Creek during summer or it may be an area that captures agricultural runoff from the area.

In this location the creek inputs was suspected to be agricultural runoff so a 608 series (pesticides) was taken, however, all constituents results were non detect. Overall water in this portion did not look like agricultural runoff. Total nitrogen was only 1.5 mg/l and total phosphorous was only 0.09 mg/l.

At this location only one parameter exceeded basin plan objectives. Sulfate was measured at 50 mg/l exceeding the 45 mg/l basin plan objective.

ST-3 San Timoteo Creek at Alessandro Rd.

This location is the most upstream location that we sampled. It is upstream of the Army Corps of Engineers plan to begin lining San Timoteo Creek. This area is very natural compared to the other locations. There was a large amount of riparian plants as well as several old cottonwood trees. Historically, the San Bernardino County Flood Control has cleared the creek bed for flood control up to this point (that is why lining is planned up to this area). Minerals were monitored at this location in 1985.

This location had the worst water quality of the three locations. Fecal coliform was measured at 1600 mpn/100ml violating the REC 1 objective. Chloride was measured at 78 mg/l exceeding the basin plan objective of 60 mg/l. Fluoride was measured at 1 mg/l exceeding the .8 mg/l basin plan objective. Sodium was measured at 121 mg/l exceeding the 60 mg/l basin plan objective. Sulfate was measured at 83 mg/l exceeding the 45 mg/l basin plan objective. TDS was measured at 619 mg/l exceeding the 290 mg/l basin plan objective. Hardness was measured at 280 mg/l exceeding the 175 mg/l basin plan objective.

In addition to violating several basin plan objectives, overall water quality has been severely degraded since the 1985 monitoring. Orthophosphate increased from .04 mg/l to .72 mg/l. Chloride increased from 22 mg/l to 78 mg/l. Sulfate increased from 47 mg/l to 83 mg/l. TDS increased from 259 mg/l to 619 mg/l. Electrical Conductivity increased from 472 uS/cm to 939 uS/cm.

Conclusions

While the result show improvement of water quality as it travels down the creek, the fact is that at each of the three locations the water was from a different source. At each location there is substantial habitat, and the proposed lining of the creek would eliminate it permanently.

Applied P & Ch Laboratory

4066 E. Mission Blvd., Pomona, CA 91766

Tel: (909) 622-5148 Fax: (909) 622-3199

run 8/15/94

APCL Analytical Report

Submitted to:
CRWQCB: Santa Ana Region
Attention: Nancy Olson-Martin
2010 Iowa Avenue, Suite 100
Riverside, CA 92507
Tel: (909)782-4130 Fax: (909)781-6288

Service ID #: 801-943775 Received : 08/26/94
Collected by: Dennis Allan Bacon Tested : 08/26-09/09/94
Collected on: 08/26/94 Reported : 09/07/94
Sample description:
Water
Project: San Timiteo Creek

Analysis of Water

801-943775 Page 1 of 2

Component Analyzed	Method	Unit	PQL	Concentration		
				ST-1	ST-3	ST-2
				94-3775-1	94-3775-3	94-3775-2
Total Coliform, MTF, 3X5 tubes	SM9221B	mg/L	2	≥1600	1600	≥1600
Fecal Coliform, MTF, 3X5 tubes	SM9221C	mg/L	2	300	1600	300
Ammonia (NH ₄ ⁺ -N)	350.2	mg/L	0.2	0.2	N.D.	N.D.
Nitrogen, Total Kjeldahl (TKN)	351.3	mg/L	0.2	0.7	0.5	0.6
Nitrite (NO ₂ ⁻ -N)	354.1	mg/L	0.02	N.D.	0.04	N.D.
Phosphorus, Total	365.2/365.3	mg/L	0.02	0.13	0.94	0.09
Alkalinity	310.1	mg/L	2	156	298	91
Bicarbonate	SM2330B	mg/L	2	191	363	111
Boron, by colorimetry	212.3	mg/L	0.1	0.3	0.2	0.2
Calcium, Ca	6010	mg/L	0.02	58	78	33
Carbonate	SM2330B	mg/L	2	N.D.	N.D.	N.D.
Chloride Cl ⁻	325.3/9252	mg/L	1	56	78	55
Electric conductivity	120.1/9050	μS/cm	1	605	939	443
Fluoride, Total F ⁻	340.2	mg/L	0.1	0.6	1.0	0.4
Iron	6010	mg/L	0.1	0.2	N.D.	0.1
Magnesium, Mg	6010	mg/L	0.05	13	23	13
pH	150 1/9040	pH Unit	0.01	7.76	7.21	7.64
Potassium, K, by AA	258.1/7610	mg/L	0.01	3.9	4.1	2.8
Sodium, Na	6010	mg/L	0.05	65	121	49
Hydroxide	SM2330B	mg/L	2	N.D.	N.D.	N.D.
Sulfate (SO ₄ ⁻)	375.4/9038	mg/L	2	73	83	50
Solids, Total Dissolved (TDS)	160.1	mg/L	10	397	619	270
Total Anions	Calc.	meq/L		6.25	9.97	4.42
Total Cations	Calc.	meq/L		6.90	11.16	4.92
Hardness by Titration	130.2	mgCaCO ₃ /L	1	200	280	128
Phosphorus, Orthophosphate	365.2/365.3	mg/L	0.01	0.03	0.72	0.03
Nitrate (NO ₃ ⁻ -N)	SM4500NO3D	mg/L	0.5	0.8	5.6	0.9



APCL Analytical Report

Analysis of Water

801-943775 Page 2 of 2

Component Analyzed	Method	Unit	PQL	Concentration	
				ST-2	94-3775-2
Organochlorine pesticides & PCBs					
Aldrin	608	µg/L	0.05		N.D.
α-BHC	608	µg/L	0.05		N.D.
β-BHC	608	µg/L	0.1		N.D.
δ-BHC	608	µg/L	0.05		N.D.
γ-BHC (Lindane)	608	µg/L	0.05		N.D.
Chlordane	608	µg/L	0.5		N.D.
4,4'-DDD	608	µg/L	0.05		N.D.
4,4'-DDE	608	µg/L	0.05		N.D.
4,4'-DDT	608	µg/L	0.1		N.D.
Dieldrin	608	µg/L	0.05		N.D.
Endosulfan I	608	µg/L	0.05		N.D.
Endosulfant II	608	µg/L	0.05		N.D.
Endosulfan Sulfate	608	µg/L	0.5		N.D.
Endrin	608	µg/L	0.05		N.D.
Endrin aldehyde	608	µg/L	0.05		N.D.
Heptachlor	608	µg/L	0.05		N.D.
Heptachlor epoxide	608	µg/L	0.05		N.D.
Toxaphene	608	µg/L	0.5		N.D.
Methoxychlor	608	µg/L	2		N.D.
PCB 1016	608	µg/L	5		N.D.
PCB 1221	608	µg/L	5		N.D.
PCB 1232	608	µg/L	5		N.D.
PCB 1242	608	µg/L	2		N.D.
PCB 1248	608	µg/L	2		N.D.
PCB 1254	608	µg/L	1		N.D.
PCB 1260	608	µg/L	1		N.D.

PQL : Practical Quantitation Limit

SM : Standard Methods for Examination of Water and Waste Water.

N.D. : Not Detected or less than the quantitation limit.

Respectfully submitted,

Jack Y. Zhang, Ph. D.,
Director

Applied P & Ch Laboratory

SAWPA DES



001006380



LABORATORY <u>APCI</u>	PROJECT MANAGER <u>Nancy Olsen - Martin</u>
SECTION <u>Planning</u>	PHONE NUMBER <u>909-782-4130</u>
PROJECT NAME <u>San Timoteo Creek</u>	SAMPLERS: (Signature) <u>Dennis Allan Bacon</u> (909) ⁷⁸² 782 <u>4962</u>

SAMPLE NUMBER	LOCATION DESCRIPTION	DATE	TIME	SAMPLE TYPE			SOLID	NO. OF CNTNRS	TESTS REQUIRED
				WATER		AIR			
				Comp.	Grab.				
ST-1	@ Lakma Ave	8-26-94	9:50		X			3	Nutrients, Bact-Minerals
ST-2	@ Santiago Canyon Rd	8-26-94	10:25		X			3	Nutrients, Bact-Minerals, 608
ST-3	@ Alessandro Rd.	8-26-94	10:45		X			3	Nutrients, Bact, Minerals

Relinquished by: (Signature) <u>Dennis Allan Bacon</u>	Received by: (Signature) <u>Matt</u>	Date/Time <u>8/26/94 3:15</u>
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by Mobile Laboratory for field analysis: (Signature)	Date/Time
Dispatched by: (Signature)	Date/Time	Received for Laboratory by:
Method of Shipment		Date/Time

Special Instructions: <u>* 608 sample is unpreferred, please analyze promptly</u>	TASK CODE
	ESTIMATED COST

Field Form for Sampling

Water Body: San Timoteo Creek

Date: 8-26-94

Sampled by: ZAB, WKS

Air Temp: _____

Lab Analysis: Nutrients
STP Minerals
Pa.

- Sample Location:
- ST-1 - San Timoteo Creek
 - ST-2 @ San Timoteo Creek
 - ST-3 @ Alessandro
 - _____

- Time Sampled:
- 9:50
 - 10:25
 - 10:45
 - _____

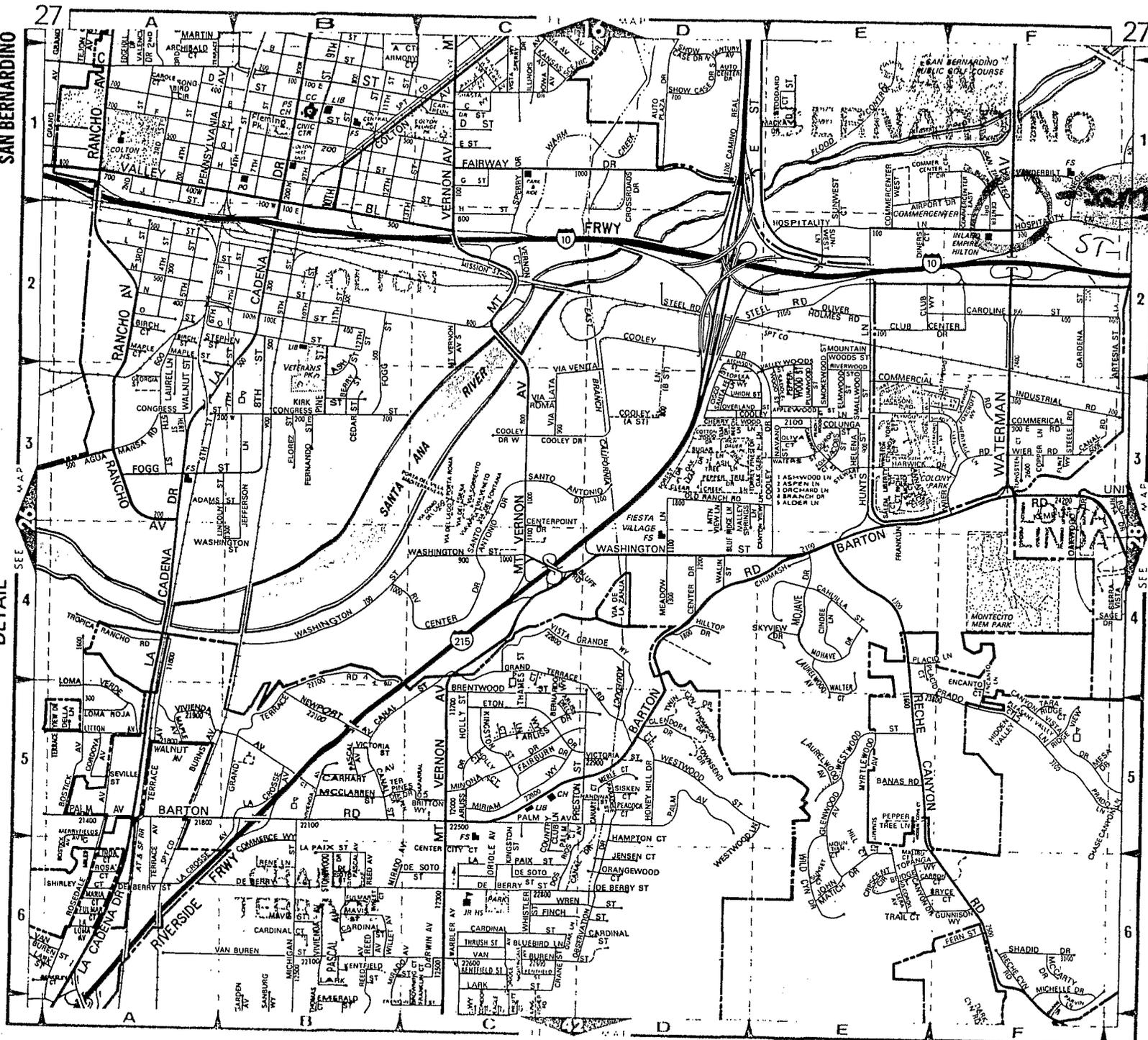
Sample Location Comments: (Include water Temp., pH, EC, DO, etc.)

- Nutrients - Bact - Minerals
- Nutrients - (608) ^{Note on COD} Bact - Minerals
- Nutrients - Bact - Minerals
- _____

General Comments:

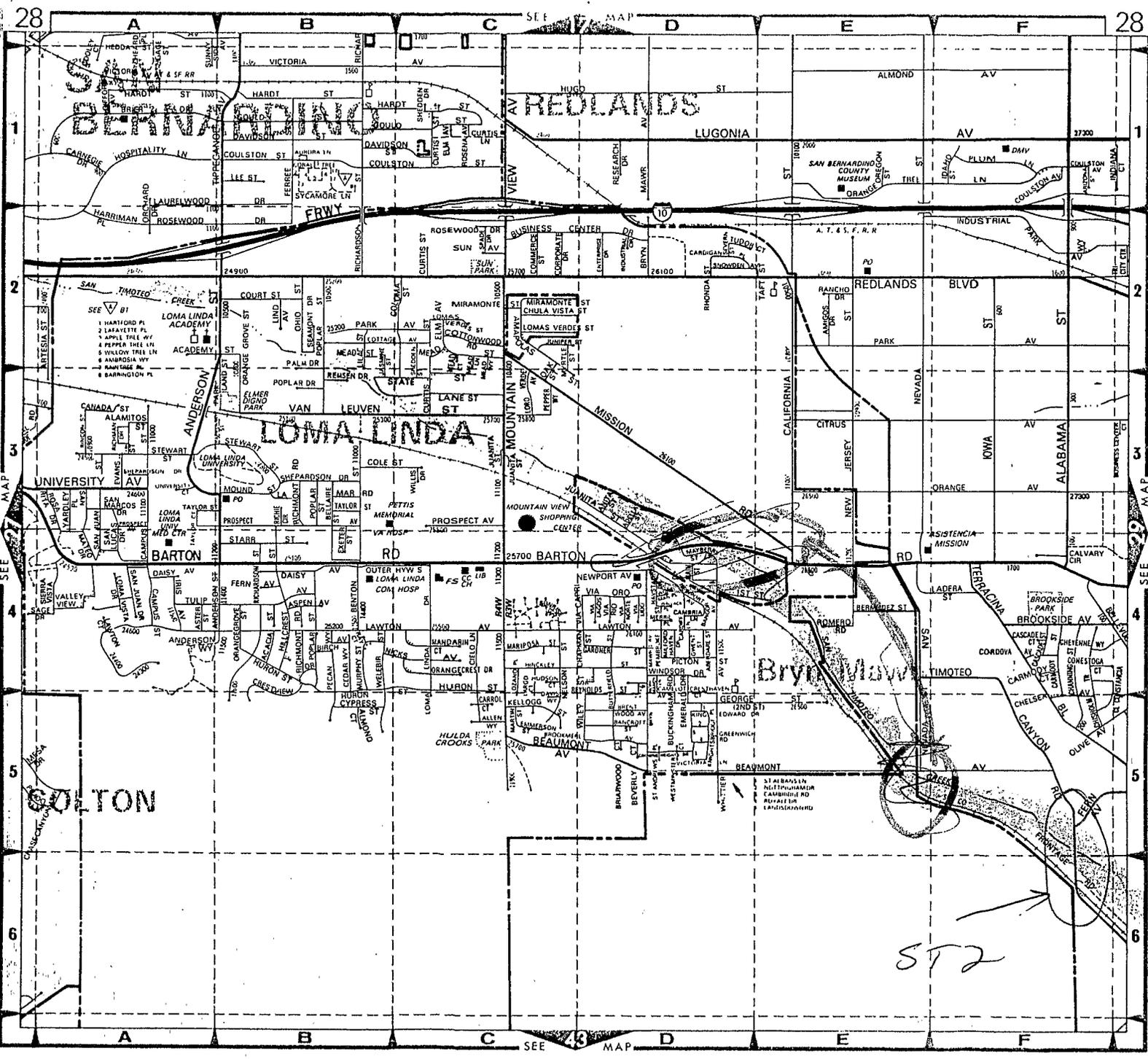
SAN BERNARDINO

DETAIL



COPYRIGHT © 1963 BY Thomas Don Map Co.

COPYRIGHT © 1993 BY Thomas Bros. Maps



SAN BERNARDINO

DETAIL

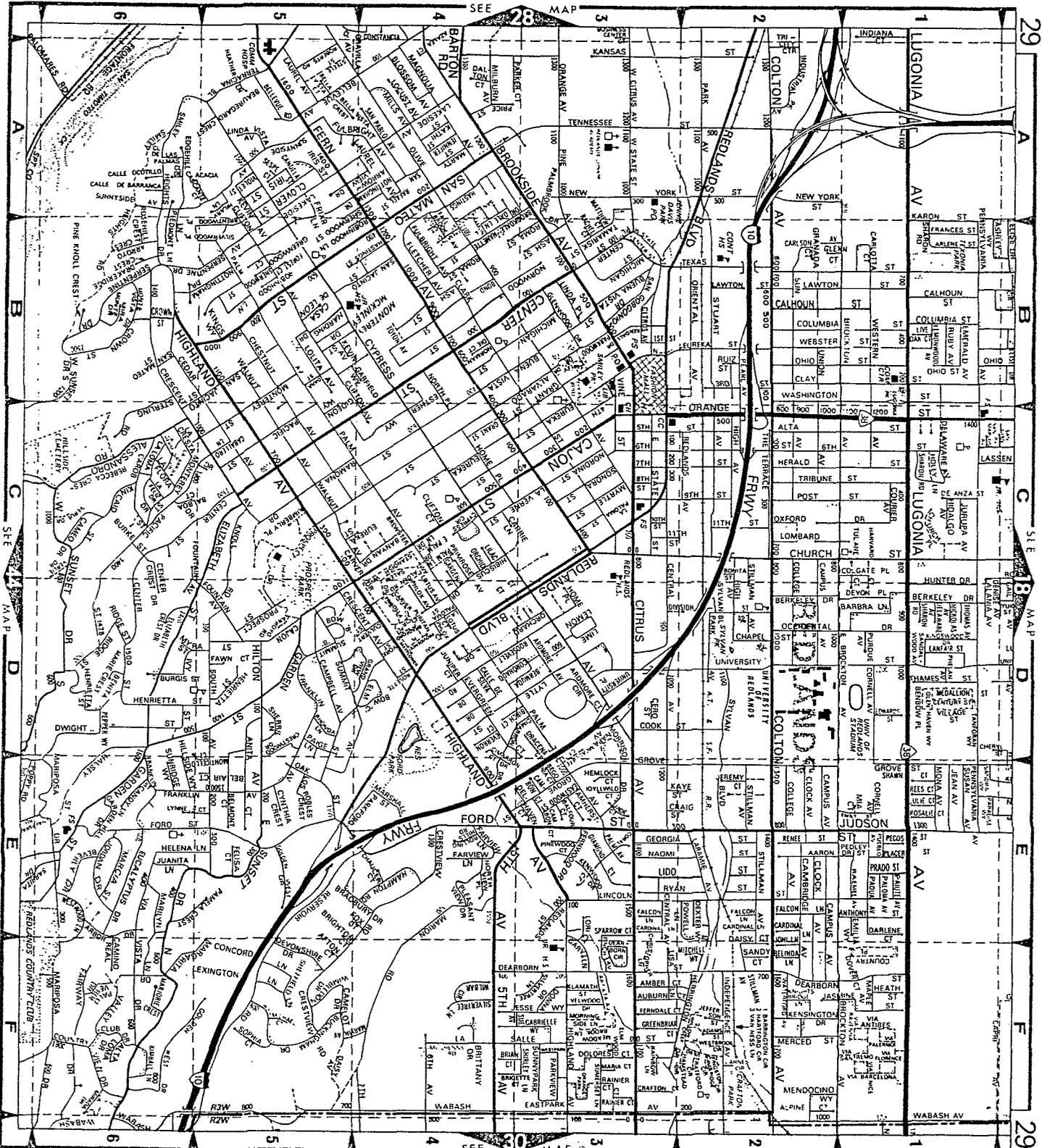
572

DETAIL

SAN BERNARDINO

SEE 28 MAP

29

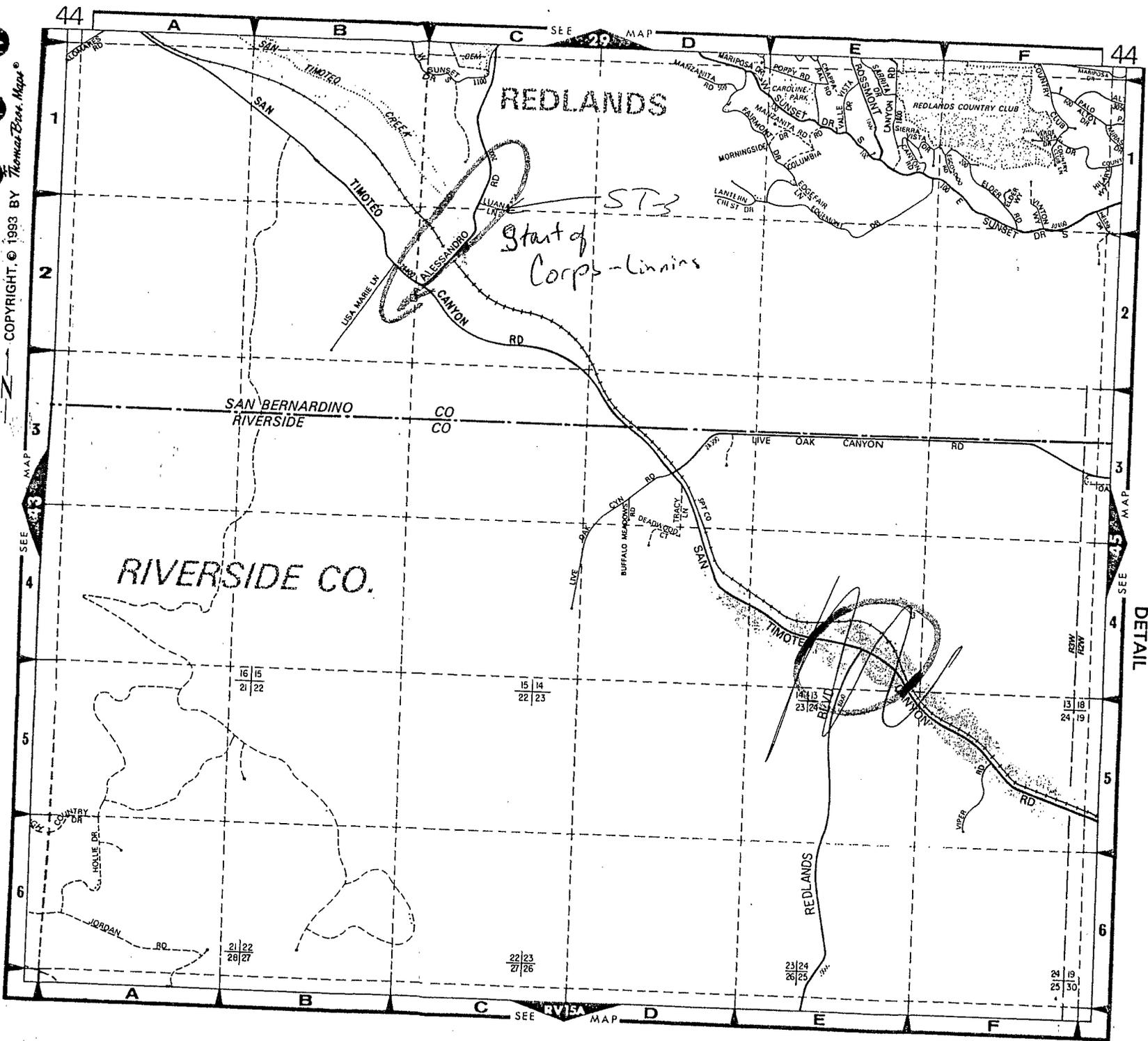


SEE 29 MAP

29

COPYRIGHT © 1993 BY Thomas Bros. Maps

COPYRIGHT. © 1993 BY Thomas Bros. Maps®



SAN BERNARDINO

DETAIL

REDLANDS

RIVERSIDE CO.

ST-3
Start of Corps - Linnis

SAN BERNARDINO
RIVERSIDE

CO
CO

44

44

1

1

2

2

3

3

4

4

5

5

6

6

SEE MAP 45

SEE MAP 45

A

B

C

D

E

F

SEE MAP 44

SEE MAP 44

SEE MAP 29

SEE MAP 45

SEE MAP 45

A

B

C

D

E

F

1

1

2

2

3

3

4

4

5

5

6

6

16 | 15
21 | 22

15 | 14
22 | 23

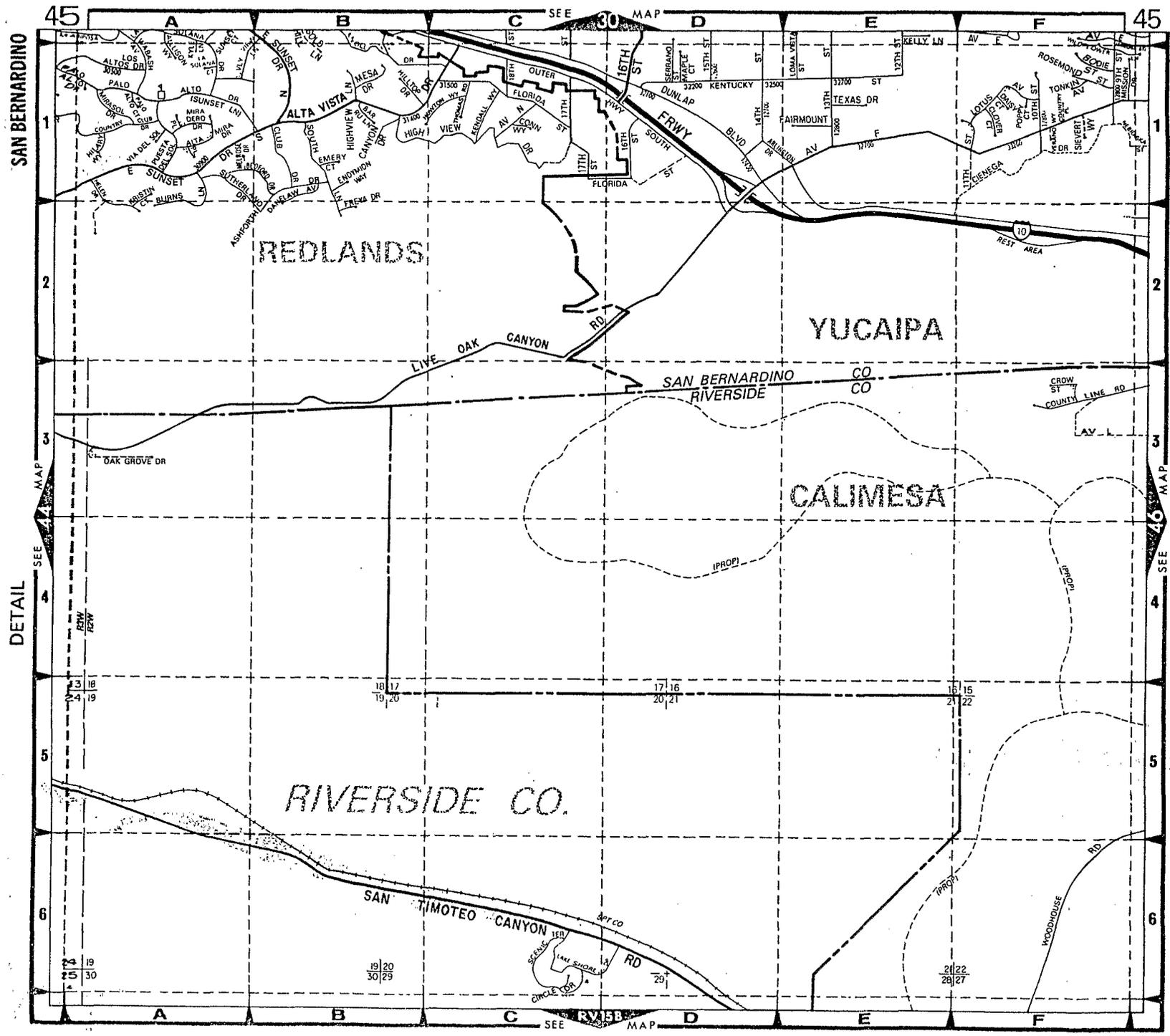
13 | 12
24 | 19

21 | 22
26 | 27

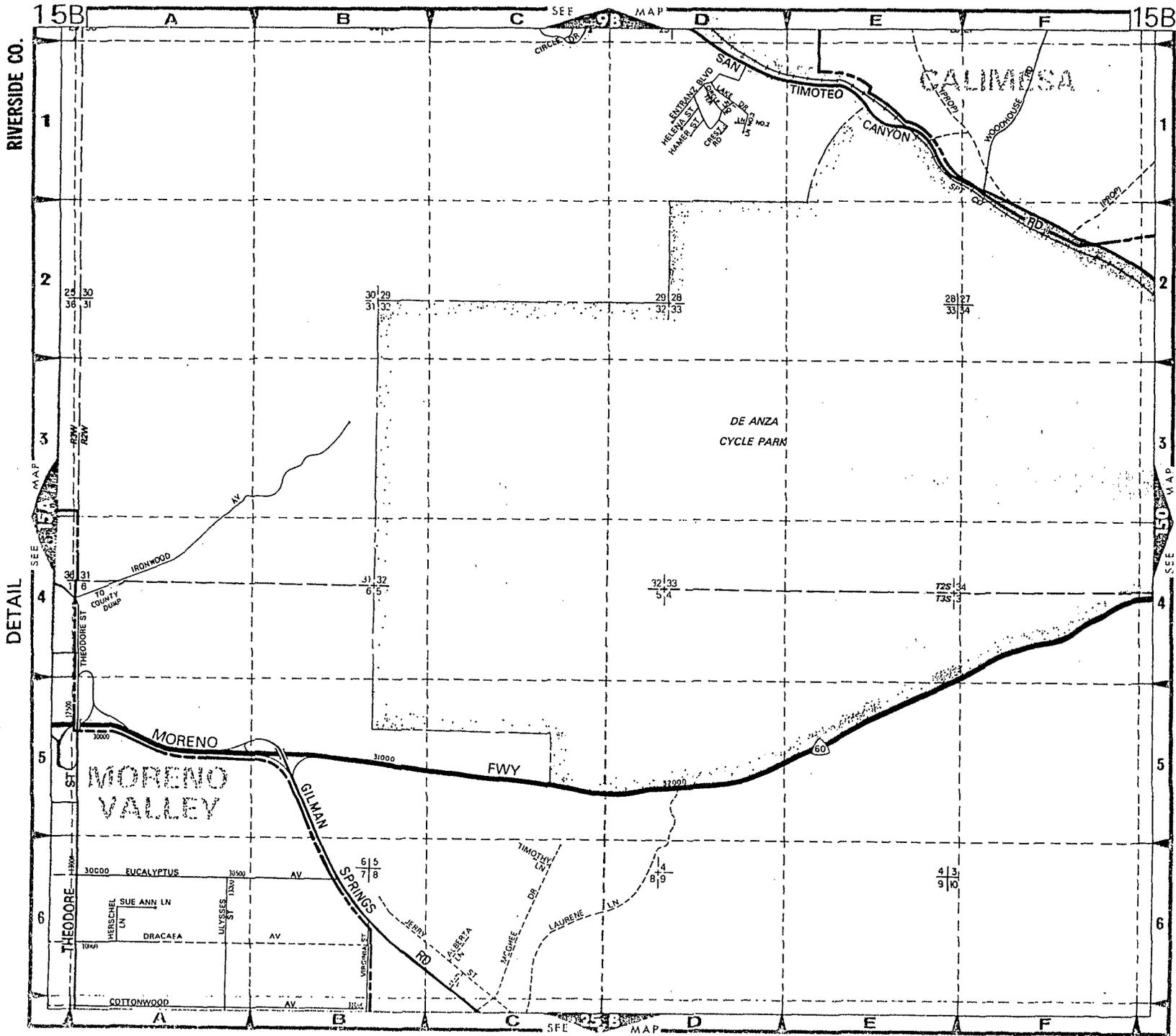
22 | 23
27 | 26

23 | 24
28 | 25

24 | 19
25 | 30



COPYRIGHT © 1993 BY Thomas Bros. Maps



RIVERSIDE CO.

DETAIL

COPYRIGHT © 1983 BY Thomas Donnell



WATER ANALYSIS (MINERAL)

CARD - 1

CARD - 2

BASIN	STATE WELL NO./STATION NO.	YR.	MO.	DAY	TIME (PST)	CO.	FIELD TEMP. U
	Y 7 11 45 00	85	11	07	12:10	36	-16.9 F
FIELD EC	FIELD PH	DO	DISCHARGE (CFS)	G.H. (FT.)	DEPTH (FT.)	SAMPLER	LK CARD CODE
4.50	7.8	1.00	1.0	NONE		5.0, 5.0	1 A

TYPE OF ANALYSIS: Partial W.O. 1644-0033

DISSOLVED HARDNESS ml 1 ml = _____ mg CaCO ₃ as CaCO ₃ mg/L 158	DISSOLVED CALCIUM ml 1 ml = _____ mg Ca Ca mg/L 19	DISSOLVED MAGNESIUM meq/L Mg meq/L Ca meq/L Mg Mg mg/L 25	DISSOLVED SODIUM dil. _____ % A _____ Curve _____ Na mg/L 31	DISSOLVED POTASSIUM dil. _____ % A _____ K mg/L 35
--	---	--	---	--

DISSOLVED TOTAL ALKALINITY ml 1 ml = _____ mg CaCO ₃ <i>metals</i> <i>organics</i> <i>wells & surface dispersion</i> <i>IDYLLWILD water district</i> <i>1977-present</i>	DISSOLVED SULFATE ml SO ₄ mg/L 47	DISSOLVED CHLORIDE ml 1 ml = _____ mg Cl Cl mg/L 22	DISSOLVED NITRATE ml NO ₃ mg/L 2
---	---	---	--

CALC. DIS. SOLIDS ml	DISSOLVED SOLIDS ml 180 C = 8 105 C = 5 T.D.S. mg/L 259.8	SPECIFIC CONDUCTANCE 25° C R (Std) _____ R (sam) _____ Factor _____ Micromhos/cm 472
-------------------------	--	--

DISSOLVED SILICA ml A _____ C _____ Factor _____ A (sam) _____ SiO ₂ mg/L 36 38	OWNER NAME _____ ADDRESS _____ CITY _____ ZIP CODE _____ DETAILED LOCATION <u>San Timoteo Cr. near San Bernardino.</u> POINT OF COLLECTION <u>Waterman Ave. bridge.</u> REF. POINT _____ CI RESID. _____ COLOR <u>NO</u> DEPTH TO WATER _____ FT. SECCHI _____ M ODOR <u>NO</u> DEPTH OF WELL _____ FT. WIND <u>3 M.P.H.</u> FOAM <u>LITTLE</u> USE _____ % CLOUD COVER <u>0</u>	3.16 Ha 0.97 SO ₄ 0.62 Cl NO ₃ F meq/L sum meq/L sum
--	--	--

PERF. INTER. _____ ALGAE NONE TURBID. NO
REMARKS NONE
DATE TO LAB. NOV 8 1985
DATE STARTED NOV 12 1985
DATE COMPLETED NOV 18 1985
CHEMIST Andrus
CHECKED GORDON J. L.
SAMPLER J. MIRANIAN & J. SCOTT OF DWR
SAMP DES 320900100

LAB. NO. 43676
3 S L.R. 2734

WATER ANALYSIS (MISCELLANEOUS)

BASIN _____ STATE WELL NO./STATION NO. Y 7 1 1 4 5 0 0 T _____ YR 8 5 1 1 0 7 TIME (RST) 1 2 1 0 CO 3 6 FIELD TEMP. - 6 9 - F

FIELD EC 4 5 0 FIELD PH 7 8 DO 1 0 0 DISCHARGE (CFS) 1.0 G.H. (FT.) NONE DEPTH (FT.) 5 0 5 0 SAMPLER 1 A LK CARD CODE 1 A

TYPE OF ANALYSIS M B A S W.O. NO. 1644-0033

<p>FIELD RESIDUAL CHLORINE</p> <p>mg/L </p>	<p>METHYLENE BLUE ACTIVE SUBSTANCES</p> <p>CODE ABS = A LAS = L</p> <p>mi. _____</p> <p>A _____ C _____</p> <p>Factor _____</p> <p>A (sam.) _____</p>	<p>OIL AND GREASE</p> <p>mi. _____</p>	<p>CYANIDE</p> <p>mi. _____</p>	<p>PHENOLS</p> <p>A _____ C _____</p> <p>Factor _____</p> <p>A (sam.) _____</p> <p>as Phenol mg/L </p>
<p>SETTLABLE SOLIDS</p> <p>mi. _____</p> <p>CODE FIELD = F LAB = L</p>	<p>MBAS</p> <p>mg/L 0.02 </p>	<p>O&G</p> <p>mg/L </p>	<p>CN</p> <p>mg/L </p>	

<p>CHEMICAL OXYGEN DEMAND</p> <p>mg/L </p>	<p>BIOCHEMICAL OXYGEN DEMAND</p> <p>Dil. _____</p> <p>Bot. No. _____</p> <p>Orig. _____</p> <p>Orig. (c) _____</p> <p>Bot. No. _____</p> <p>Final _____</p> <p>Final (c) _____</p> <p>Diff. _____</p> <p>Seed _____</p> <p>Corr. _____</p> <p>mg/L _____</p> <p>% Dep. _____</p> <p>Thio. Factor (O) _____ (F) _____</p>
--	--

<p>SUSPENDED SOLIDS</p> <p>mi. _____</p> <p>CODE 180°C = 8 105°C = 5</p>	<p>TANNIN AND LIGNIN</p> <p>mi. _____</p> <p>as Tannic Acid mg/L </p>	<p>SAWPA DES</p> <p>001006024</p>	<p>BOD</p> <p>mg/L </p>
--	---	-----------------------------------	-------------------------

<p>SS</p> <p>mg/L </p>	<p>YSS</p> <p>mg/L </p>	<p>COLOR, TRUE</p> <p>pH </p> <p>Color Units </p>	<p>OWNER _____</p> <p>NAME _____ ADDRESS _____</p> <p>CITY _____ ZIP CODE _____</p> <p>DETAILED LOCATION San Timoteo Cr. near San Bernardino.</p> <p>POINT OF COLLECTION Waterman Ave. Bridge. PPG _____</p> <p>REF. POINT _____ CI RESID _____ COLOR NO</p> <p>DEPTH TO WATER _____ FT. SECCHI _____ M ODOR NO</p> <p>DEPTH OF WELL _____ 3.M.P.H. NO</p> <p>USE _____ % CLOUD COVER 0</p> <p>ALGAE NONE TURBID. NO</p>	<p>SET UP: _____ DAY CODE</p> <p>Date _____ 4 = A</p> <p>Time _____ 5 = B</p> <p>TAKE OFF: _____ 6 = C</p> <p>Date _____ 7 = D</p> <p>Time _____ 100 = E</p> <p>OTHER = F</p>
------------------------	-------------------------	---	--	---

LAB. 50 50 2

PERF. INTER. _____

REMARKS NONE

DATE TO LAB NOV 8 1985

DATE STARTED NOV 12 1985

DATE COMPLETED NOV 18 1985

CHEMIST *Amellson*

CHECKED GORDON J. CHEW

42676

D T LAB. NO.
3 S L R 2, 7, 3, 4

WATER ANALYSIS (NUTRIENT)

CARD - 1

CARD - 2

CARD - 3

BASIN _____ STATE WELL NO./STATION NO. Y 7, 1, 1, 4, 5, 0, 0 T _____ YR. 85 MO. 1 DAY 10 TIME (PST) 12:10 CO. 36 FIELD TEMP. U -6.9

FIELD EC 450 FIELD PH 7.8 DO 1.0 DISCHARGE (CFS) 1.0 G.H. (FT.) NONE DEPTH (FT.) _____ SAMPLER. 50, 50 LK. CARD COD 1 A

TYPE OF ANALYSIS: PO W.O. 1644-0033

FIELD CARBON DIOXIDE CO ₂ mg/L _____	TURBIDITY CODE Candle = C Hach = A Hellige = E Hach Colorimeter = B	TOTAL AMMONIA _____ ml	TOTAL ORGANIC NITROGEN _____ ml	TOTAL AMMONIA AND ORGANIC NITROGEN _____ ml
--	---	------------------------	---------------------------------	---

FIELD ALKALINITY as CaCO ₃ Phen. mg/L _____ Tot. mg/L _____	Turb. _____ CODE _____ R _____	as N mg/L _____	as N mg/L _____	as N mg/L _____
--	--------------------------------	-----------------	-----------------	-----------------

DISSOLVED NITRITE _____ ml A _____ C _____ Factor _____ A (sam.) _____	DISSOLVED NITRATE _____ ml as N mg/L _____	DISSOLVED NITRATE AND NITRITE _____ ml as N mg/L _____	DISSOLVED AMMONIA _____ ml as N mg/L _____	CA _____
---	---	---	---	----------

DISSOLVED ORGANIC NITROGEN _____ ml as N mg/L _____	DISSOLVED ORTHOPHOSPHATE _____ ml A _____ C _____ Factor _____ A (sam.) _____ as P mg/L <u>0.04</u>	DISSOLVED ACID HYDROLYZABLE PHOSPHATE _____ ml A _____ C _____ Factor _____ A (sam.) _____ AP _____ OP _____ as P mg/L _____	DISSOLVED TOTAL PHOSPHORUS _____ ml A _____ C _____ Factor _____ A (sam.) _____ as P mg/L _____	TOTAL ORTHOPHOSPHATE _____ ml A _____ C _____ Factor _____ A (sam.) _____ as P mg/L _____
--	---	---	---	---

TOTAL PHOSPHORUS _____ ml A _____ C _____ Factor _____ A (sam.) _____ as P mg/L _____	OWNER NAME _____ ADDRESS _____ CITY _____ ZIP CODE _____ DETAILED LOCATION <u>San Timoteo Cr. near San Bernardino.</u> POINT OF COLLECTION <u>Waterman Ave. bridge.</u> PRG _____ REF. POINT _____ CI RESID. _____ COLOR <u>NO</u> DEPTH TO WATER _____ FT. SECCHI _____ M ODCR <u>NO</u> DEPTH OF WELL _____ FT. WIND <u>3 M.P.H.</u> FOAM <u>LITTLE</u> USE _____ % CLOUD COVER <u>0</u>	DATE TO LAB. <u>NOV 8 1985</u> DATE STARTED <u>NOV 12 1985</u> DATE COMPLETED <u>NOV 18 1985</u> CHEMIST <u>Anderson</u> CHECKED <u>GORDON J. CHEW</u>
---	---	--



LAB. OV
50, 50 3

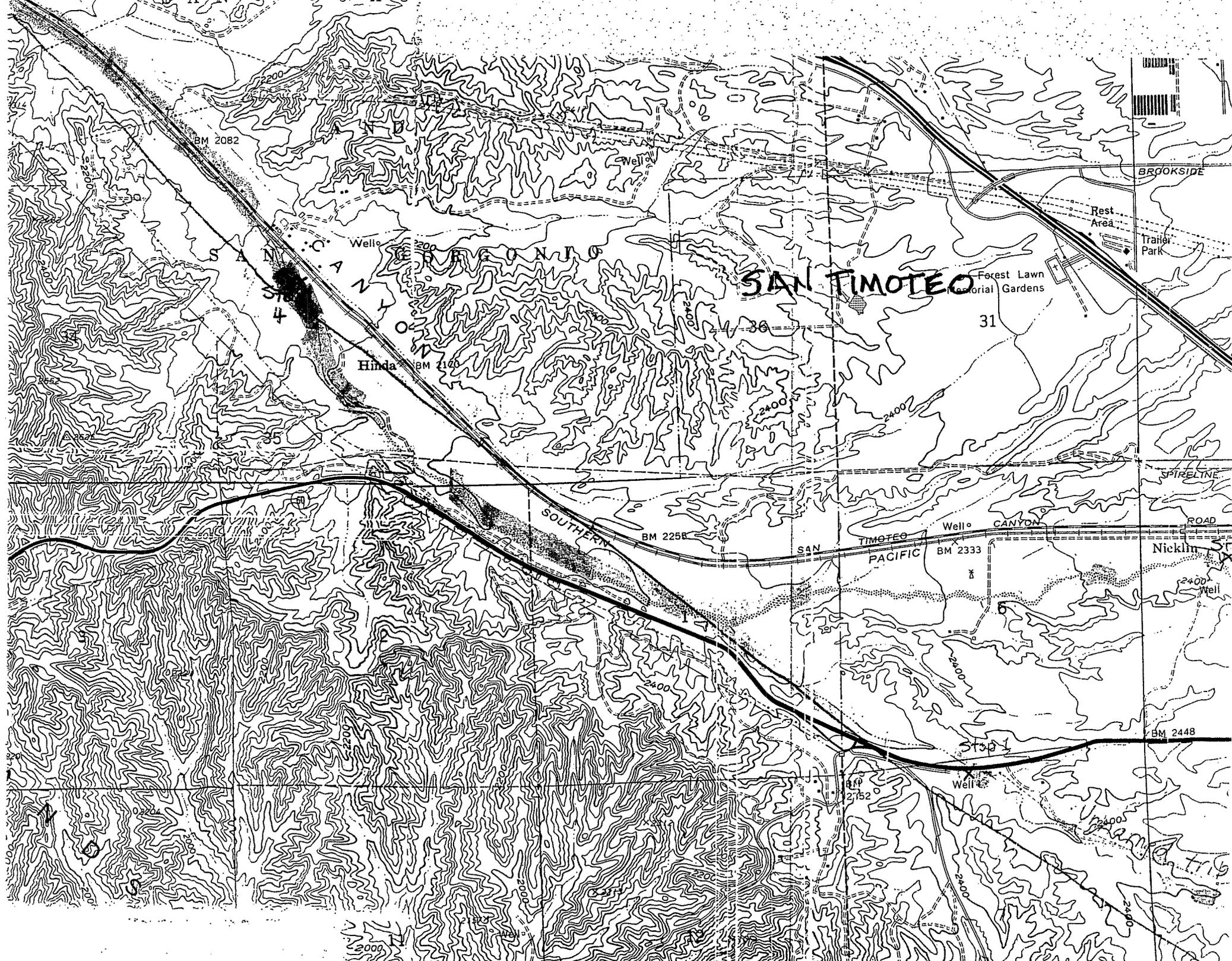
PERF. INTER _____ ALGAE NONE TURBID. NO
REMARKS NONE

2. San Timoteo Creek:

- Beneficial Uses: GWR, REC1, REC2, WARM, WILD
- Hydrologic Unit: 801.60
- Total Water Body Size:
- Size Impaired: Unknown at this time
- Extent of Impairment: Unknown at this time
- Data Analyses: no ambient water quality data submitted
- Potential Sources: Unknown at this time
- Recommendation: More monitoring due to not enough data points available per parameter to reach a conclusion for impairment and insufficient data to back up results.
- TMDL Priority: None at this time
- TMDL Start Date: Not applicable at this time
- TMDL End Date: Not applicable at this time

211





BM 2082

S 4 N
T 4 N
4

Well

Hinda

BM 2160

SAN TIMOTEO

Forest Lawn Memorial Gardens

31

BROOKSIDE

Rest Area

Trailer Park

SOUTHERN PACIFIC

BM 2258

S 4 N

TIMOTEO CANYON

Well

BM 2333

Nicklin

Well

BM 2448

Well

2752

Well



Yucaipa Valley Water District

12770 Second Street • P. O. Box 730 • Yucaipa, California 92399-0730
(909) 797-5117 • Fax: (909) 797-6381 • E-mail: yvwd@eee.org

ORDER - PERMITS
DATE 5/15
TIME
BY

Date: May, 15 2001

To: Pavlova N. Vitale
Santa Ana Regional Water Quality Control Board
3737 Main Street Suite 500
Riverside, CA 92501

Re: Submittal from Yucaipa Valley Water District for the Development of Section
303(d) List for the Santa Ana Region

Dear Ms. Vitale:

The Yucaipa Valley Water District is providing the Santa Ana Regional Water Quality Control Board with water quality information to assist in the development of the section 303(d) list for the Santa Ana Region. Please find attached two (2) copies of final effluent data generated by the District from July 1997 through December 2000, and an electronic copy on a 3.5 inch data floppy.

If you have questions concerning this submittal, please call me at (909) 795-2491.

Sincerely,

Matthew Harward
Wastewater Operations Superintendent

Directors and Officers

TOM SHALHOUB
Division 1

BRUCE GRANLUND
Division 2

DAVID LESSER
Division 3

CONRAD NELSON
Division 4

HANK WOCHHOLZ
Division 5

JOSEPH B. ZOBA
General Manager
and Secretary

Person Providing Information: Matthew Harward
Wastewater Operations Superintendent
Yucaipa Valley Water District
12770 Second Street
P.O. Box 730
Yucaipa, CA 92399-0730
Phone (909) 795-2491
Fax (909) 795-0402

Contact Person: same as above

Electronic Data Format: Microsoft Excel 2000

Quality Assurance Description: The Yucaipa Valley Water District Laboratory is certified by the ELAP division of the Department of Health Services. The Laboratory meets ELAP and EPA regulations and guidelines for Quality Control and Assurance. All analyses are performed according to Standard Methods for the Examination of Water and Wastewater 18th Edition, 1992.

Location of District Discharge: Reach 3 of San Timeteo Creek

YUCAIPA VALLEY WATER DISTRICT

1997 Effluent Data

Monthly Average Values

<u>Constituent</u>	<u>Units</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>MDL</u>
Flow	MGD	2.35	2.33	2.51	2.62	2.84	2.86	
Specific Conductance	umhos/cm	776.4	775	762.6	772.5	776.2	766.6	
pH *	Low/High	7.0/7.3	7.0/7.2	7.0/7.35	7.0/7.35	6.8/7.3	6.7/7.3	
Turbidity *	NTU	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Chlorine (residual) *	mg/L	0.26	<0.1	0.24	<0.1	<0.1	<0.1	0.10
Suspended Solids	mg/L	1.4	1.3	1.3	1	1.2	1.2	1.0
BOD	mg/L	1.76	1.55	1.65	1.76	1.52	2.14	2.0
COD	mg/L	22.9	20.4	17.8	18.3	14.2	15.5	3.0
Ammonia-nitrogen	mg/L	0.021	0.178	0.005	0.175	0.034	0.02	0.1
Coliform **	MPN/100ml	2	5	2	8	8	7	<2
Chloride	mg/L	70	73	74	63	77	68	5.0
Sodium	mg/L	86	85	84	81	64	91	5.0
Calcium	mg/L	49	54	29	49	54	53	5.0
Magnesium	mg/L	14	10	11	13	12	12	5.0
Carbonate	mg/L	<10	<10	<10	<10	<10	<10	10.0
Bicarbonate	mg/L	160	159	160	180	160	150	10.0
Sulfate	mg/L	59	67	50	66	62	62	5.0
Fluoride ~	mg/L	0.58	0.58	0.56	0.57	0.56	0.59	0.02
Boron ~	mg/L	0.24	0.24	0.2	0.17	0.14	0.12	0.003
Filtrable Residue ~	mg/L	500	496	484	482	478	457	10.0
Total Hardness	mg/L	180	180	120	180	160	180	0.50
Total Inorganic Nitrogen ~	mg/L	18.9	17.7	16.9	15.9	15.1	15.4	2.50
Nitrate	mg/L	19	14	14	16	17	17	0.50
Arsenic	mg/L						ND	1.0
Barium	mg/L						ND	0.020
Cadmium	mg/L						ND	0.0050
Total Chromium	mg/L						ND	0.01
Cobalt	mg/L						ND	0.050
Copper	mg/L						ND	0.0250
Cyanide	mg/L						ND	0.01
Lead	mg/L						ND	0.0050
Iron ~	mg/L	0.032	0.023	0.03	0.03	0.027	0.023	0.04
Mercury	mg/L	ND	ND	<0.2	ND	ND	ND	0.0002
Manganese ~	mg/L	0.01	0.008	0.01	0.008	0.007	0.007	0.0001
Nickel	mg/L	ND	ND	ND	ND	ND	ND	0.040
Selenium	mg/L	ND	ND	ND	ND	ND	ND	0.0050
Silver	mg/L	ND	ND	ND	ND	ND	ND	0.010
Zinc	mg/L	0.07	ND	0.065	0.064	0.054	0.099	0.020

* CONTINUOUS MONITORING

** HIGH MEDIAN MPN FOR EACH MONTH

ND - No Detection

~ 12 Month Running Average

YUCAIPA VALLEY WATER DISTRICT
1998 Effluent Data
Monthly Average Values

<u>Constituent</u>	<u>Units</u>	<u>Jan</u>	<u>Feb</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>MDL</u>
Flow	MGD	2.83	2.99	2.82	2.78	2.79	2.7	
Specific Conductance	umhos/cm	783.2	768.8	777.1	784.55	780.08	750.96	
pH *	Low/High	6.6/7.2	6.5/7.1	6.6/7.25	6.6/7.2	6.7/7.3	6.6/7.25	
Turbidity *	NTU							
Chlorine (residual) *	mg/L							0.10
Suspended Solids	mg/L	1.7	1.9	1.6	1.15	1.4	4.33	1.0
BOD	mg/L	1.96	2.06	2.03	1.76	1.85	2.5	2.0
COD	mg/L	18.3	23.7	29.1	26.03	29.65	35.83	3.0
Ammonia-nitrogen	mg/L	0.038	0.021	2.182	0.28	0.03	0.29	0.1
Coliform **	MPN/100ml	2	4	11	8	8	2	<2
Chloride	mg/L	193	71	74.8	81	78	79	5.0
Sodium	mg/L	79	77	73	72	91	***	5.0
Calcium	mg/L	41	29	42	59	40	41	5.0
Magnesium	mg/L	9.6	9.6	9.6	9.5	11	11	5.0
Carbonate	mg/L	<10	ND	ND	ND	ND	ND	10.0
Bicarbonate	mg/L	130	110	140	150	150	150	10.0
Sulfate	mg/L	43	54	76	65	60	77	5.0
Fluoride ~	mg/L	0.57	0.54	0.56	0.57	0.59	0.61	0.02
Boron ~	mg/L	0.1	0.07	0.06	0.05	0.03	0.02	0.003
Filtrable Residue ~	mg/L	450	424	154	427	430	424	10.0
Total Hardness	mg/L	140	110	140	190	140	150	0.50
Total Inorganic Nitrogen ~	mg/L	15.3	14.6	15.31	14.8	14.7	16.3	2.50
Nitrate	mg/L	14	16	1.2	18	17	24	0.50
Arsenic	mg/L							1.0
Barium	mg/L							0.020
Cadmium	mg/L							0.0050
Total Chromium	mg/L							0.01
Cobalt	mg/L							0.050
Copper	mg/L							0.0250
Cyanide	mg/L							0.01
Lead	mg/L							0.0050
Iron ~	mg/L	0.028	0.03	0.0316	0.081	0.08	0.0928	0.04
Mercury	mg/L	ND	ND	0.0014	ND	ND	0.0005	0.0002
Manganese ~	mg/L	0.007	ND	ND	0.004	0.004	0.004	0.0001
Nickel	mg/L	ND	ND	ND	ND	ND	ND	0.040
Selenium	mg/L	0.009	ND	ND	ND	ND	ND	0.0050
Silver	mg/L	0.2	ND	0.58	ND	ND	ND	0.010
Zinc	mg/L	0.059	0.053	0.082	0.055	0.063	0.071	0.020

* CONTINUOUS MONITORING

** HIGH MEDIAN MPN FOR EACH MONTH

ND - No Detection

~ 12 Month Running Average

YUCAIPA VALLEY WATER DISTRICT

1998 Effluent Data

Monthly Average Values

<u>Constituent</u>	<u>Units</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>MDL</u>
Flow	MGD	2.67	2.71	2.79	2.8	2.87	2.87	
Specific Conductance	umhos/cm	770.03	775.68	777.76	776.35	787.57	778.16	
pH *	Low/High	6.75/7.3	6.5/7.2	6.5/7.35	6.55/7.35	6.6/7.3	6.7/7.3	
Turbidity *	NTU							
Chlorine (residual) *	mg/L							0.10
Suspended Solids	mg/L	1.4	1.3	1.14	1.1	1.02	1.24	1.0
BOD	mg/L	1.49	1.55	1.7	1.94	1.85	2.39	2.0
COD	mg/L	26.7	24.26	22.35	25.86	25.21	26.6	3.0
Ammonia-nitrogen	mg/L	0.03	0.94	0.77	1.53	1.21	0.84	0.1
Coliform **	MPN/100ml	5	5	11	5	4	2	<2
Chloride	mg/L	61	67	84.1	67.8	80.1	77	5.0
Sodium	mg/L	99	90	123	81	84	76	5.0
Calcium	mg/L	40	ND	41	51	39.8	37.6	5.0
Magnesium	mg/L	11	10	10.3	12.8	9.81	9.83	5.0
Carbonate	mg/L	ND	ND	ND	<10.0	ND	ND	10.0
Bicarbonate	mg/L	160	170	120	157	150	144	10.0
Sulfate	mg/L	59	59	42	49.9	46.9	77	5.0
Fluoride ~	mg/L	0.62	0.62	0.62	0.64	0.63	0.6	0.02
Boron ~	mg/L	ND	ND	ND	0.024	0.023	0.023	0.003
Filtrable Residue ~	mg/L	429.33	430	422	424.5	416.2	428	10.0
Total Hardness	mg/L	140	130	150	172	178	134	0.50
Total Inorganic Nitrogen ~	mg/L	15.9	14.9	13.6	19.08	18.8	18.6	2.50
Nitrate	mg/L	ND	15	1.42	82.6	18	14.7	0.50
Arsenic	mg/L				0.0011			1.0
Barium	mg/L				0.0092			0.020
Cadmium	mg/L				ND			0.0050
Total Chromium	mg/L				0.0064			0.01
Cobalt	mg/L				0.0002			0.050
Copper	mg/L				0.0109			0.0250
Cyanide	mg/L				ND			0.01
Lead	mg/L				0.0005			0.0050
Iron ~	mg/L	0.0961	0.1	0.1014	0.1091	0.122	0.1412	0.04
Mercury	mg/L	0.0002	0.0007	ND	ND	0.00025	ND	0.0002
Manganese ~	mg/L	0.004	0.004	0.004	0.004	0.007	0.007	0.0001
Nickel	mg/L	ND	ND	ND	0.0032	ND	ND	0.040
Selenium	mg/L	ND	ND	0.003	ND	ND	ND	0.0050
Silver	mg/L	ND	ND	0.426	ND	ND	ND	0.010
Zinc	mg/L	0.066	0.076	0.06	0.053	0.066	ND	0.020

* CONTINUOUS MONITORING

** HIGH MEDIAN MPN FOR EACH MONTH

ND - No Detection

~ 12 Month Running Average

YUCAIPA VALLEY WATER DISTRICT

1999 Effluent Data

Monthly Average Values

<u>Constituent</u>	<u>Units</u>	<u>Jan</u>	<u>Feb</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>MDL</u>
Flow	MGD	2.8	2.8	2.76	2.82	2.75	2.67	
Specific Conductance	umhos/cm	767	773	780	791	782	760	
pH *	Low/High	6.6/7.3	6.7/7.3	6.7/7.3	6.7/7.4	6.8/7.4	6.7/7.4	
Turbidity *	NTU	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Chlorine (residual) *	mg/L	>0.1	>0.1	<0.1	<0.1	<0.1	<0.1	0.10
Suspended Solids	mg/L	1.1	0.75	0.98	0.85	0.8	1.2	1.0
BOD	mg/L	3.02	1.85	1.96	1.85	1.84	1.87	2.0
COD	mg/L	26.08	24.61	23.45	24.35	22.3	25.3	3.0
Ammonia-nitrogen	mg/L	0.48	0.13	0.13	0.26	0.04	0.08	0.1
Coliform **	MPN/100ml	2	2	2	8	2	6	<2
Chloride	mg/L	75.7	73.4	75.6	73	76.7	73.6	5.0
Sodium	mg/L	60	80	100	70	89.5	84.2	5.0
Calcium	mg/L	52.3	34.2	36.7	35.8	45.6	45.2	5.0
Magnesium	mg/L	13.1	9.9	8.9	10.9	11.2	10.5	5.0
Carbonate	mg/L	<0.10	ND	ND	ND	ND	ND	10.0
Bicarbonate	mg/L	126	125	122	135	130	124	10.0
Sulfate	mg/L	51	62.6	52.7	38	38.7	36.6	5.0
Fluoride ~	mg/L	0.63	0.66	0.67	0.67	0.69	0.66	0.02
Boron ~	mg/L	0.023	0.024	0.024	0.023	0.024	0.028	0.003
Filtrable Residue ~	mg/L	433	452	449	450	452	458	10.0
Total Hardness	mg/L	170	126	128	134	130	156	0.50
Total Inorganic Nitrogen ~	mg/L	18.7	18.3	18.8	17.8	12.2	11.5	2.50
Nitrate	mg/L	10.6	8.4	8.5	10.8	16.5	12.7	0.50
Arsenic	mg/L							1.0
Barium	mg/L							0.020
Cadmium	mg/L							0.0050
Total Chromium	mg/L							0.01
Cobalt	mg/L							0.050
Copper	mg/L							0.0250
Cyanide	mg/L							0.01
Lead	mg/L							0.0050
Iron ~	mg/L	0.133	0.133	0.134	0.09	0.09	0.104	0.04
Mercury	mg/L	ND	0.33	ND	ND	ND	ND	0.0002
Manganese ~	mg/L	0.007	0.007	0.007	0.003	0.003	0.003	0.0001
Nickel	mg/L	ND	ND	ND	ND	ND	ND	0.040
Selenium	mg/L	ND	ND	ND	ND	ND	0.014	0.0050
Silver	mg/L	ND	80	ND	ND	ND	ND	0.010
Zinc	mg/L	0.077	0.054	0.118	ND	0.054	0.115	0.020

* CONTINUOUS MONITORING

** HIGH MEDIAN MPN FOR EACH MONTH

ND - No Detection

~ 12 Month Running Average

YUCAIPA VALLEY WATER DISTRICT
1999 Effluent Data
Monthly Average Values

<u>Constituent</u>	<u>Units</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>MDL</u>
Flow	MGD	2.68	2.8	2.87	2.86	2.92	2.90	
Specific Conductance	umhos/cm	780	765	771	765	785	774	
pH *	Low/High	6.7/7.4	6.7/7.4	6.7/7.4	6.6/7.4	6.6/7.4	6.7/7.6	
Turbidity *	NTU	<2.0	<2.0	<2.0	>2.0	<2.0	<2.0	
Chlorine (residual) *	mg/L	<0.1	<0.1	<0.1	<0.1	>0.1	<0.1	0.10
Suspended Solids	mg/L	1.1	0.87	0.77	0.96	0.94	1	1.0
BOD	mg/L	1.69	1.44	1.66	1.84	2.16	2.26	2.0
COD	mg/L	23.8	26.7	20.1	23.9	28.8	27.2	3.0
Ammonia-nitrogen	mg/L	ND	0.07	0.05	0.09	1.04	2.4	0.1
Coliform **	MPN/100ml	5	4	5	4	2	11	<2
Chloride	mg/L	68.9	64	73	76	82.8	79.4	5.0
Sodium	mg/L	63	90	102	80	88	76	5.0
Calcium	mg/L	43.3	51.6	55.4	49	44.5	45.8	5.0
Magnesium	mg/L	9.33	12.1	12	12	11.4	10.8	5.0
Carbonate	mg/L	ND	ND	ND	ND	ND	ND	10.0
Bicarbonate	mg/L	135	155	145	143	128	135	10.0
Sulfate	mg/L	34.6	32.1	36.4	53	75	92	5.0
Fluoride ~	mg/L	0.55	0.64	0.61	0.63	0.61	0.58	0.02
Boron ~	mg/L	0.041	0.05	0.072	0.08	0.11	0.14	0.003
Filtrable Residue ~	mg/L	508	463	479	482	488	483	10.0
Total Hardness	mg/L	147	172	188	172	158	159	0.50
Total Inorganic Nitrogen ~	mg/L	9.1	11.1	12.1	11.7	11.4	11.3	2.50
Nitrate	mg/L	7.4	9.3	16.6	6.8	17.1	10.8	0.50
Arsenic	mg/L						ND	1.0
Barium	mg/L						ND	0.020
Cadmium	mg/L						ND	0.0050
Total Chromium	mg/L						ND	0.01
Cobalt	mg/L						ND	0.050
Copper	mg/L						0.032	0.0250
Cyanide	mg/L						ND	0.01
Lead	mg/L						ND	0.0050
Iron ~	mg/L	0.095	0.106	0.109	0.11	0.11	0.12	0.04
Mercury	mg/L	ND	ND	ND	ND	ND	ND	0.0002
Manganese ~	mg/L	0.003	0.003	0.003	ND	ND	0.002	0.0001
Nickel	mg/L	ND	ND	ND	ND	ND	ND	0.040
Selenium	mg/L	ND	ND	ND	ND	ND	ND	0.0050
Silver	mg/L	ND	ND	ND	ND	ND	ND	0.010
Zinc	mg/L	0.082	0.07	0.072	0.086	0.095	0.128	0.020

* CONTINUOUS MONITORING

** HIGH MEDIAN MPN FOR EACH MONTH

ND - No Detection

~ 12 Month Running Average

YUCAIPA VALLEY WATER DISTRICT
2000 Effluent Data
Monthly Average Values

<u>Constituent</u>	<u>Units</u>	<u>Jan</u>	<u>Feb</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>MDL</u>
Flow	MGD	2.97	3.01	2.91	2.91	2.87	2.92	
Specific Conductance	umhos/cm	775	790	853	797	805	809	
pH *	Low/High	6.6/7.5	6.5/7.3	6.5/8.2	6.6/7.6	6.5/7.5	6.8/7.5	
Turbidity *	NTU	>2.0	>2.0	<2.0	<2.0	<2.0	<2.0	
Chlorine (residual) *	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.10
Suspended Solids	mg/L	1.2	0.96	1.4	1.4	1.4	1.4	1.0
BOD	mg/L	1.9	1.9	1.7	1.6	2	1.1	2.0
COD	mg/L	40	27	28	25	28	24	3.0
Ammonia-nitrogen	mg/L	1.65	0.2	2.7	1.9	2.1	2.3	0.1
Coliform **	MPN/100ml	130	17	17	8	4	2	<2
Chloride	mg/L	77.6	75.4	87.3	84.6	84	80.2	5.0
Sodium	mg/L	90	80	94.1	89.2	100	90.2	5.0
Calcium	mg/L	45.6	45	43.5	50.3	49.5	49.7	5.0
Magnesium	mg/L	11.2	10.9	10.7	12.3	12.3	12.7	5.0
Carbonate	mg/L	ND	ND	ND	ND	ND	ND	10.0
Bicarbonate	mg/L	164	121	135	134	134	134	10.0
Sulfate	mg/L	83	54.3	61	49.1	50	48.2	5.0
Fluoride ~	mg/L	0.62	0.53	0.65	0.62	0.61	0.62	0.02
Boron ~	mg/L	0.17	0.19	0.22	0.26	0.29	0.32	0.003
Filtrable Residue ~	mg/L	482	485	486	485	487	488	10.0
Total Hardness	mg/L	160	157	153	176	150	170	0.50
Total Inorganic Nitrogen ~	mg/L	11.4	13.3	13.2	14.1	14.7	13.9	2.50
Nitrate	mg/L	13.5	24.3	7.8	17	21	19.3	0.50
Arsenic	mg/L							1.0
Barium	mg/L							0.020
Cadmium	mg/L	ND	ND	ND	ND	ND	ND	0.0050
Total Chromium	mg/L							0.01
Cobalt	mg/L							0.050
Copper	mg/L	ND	ND	0.021	ND	ND	ND	0.0250
Cyanide	mg/L							0.01
Lead	mg/L	ND	ND	ND	ND	ND	ND	0.0050
Iron ~	mg/L	0.11	0.11	0.12	0.11	0.11	0.01	0.04
Mercury	mg/L	0.006	ND	ND	ND	ND	ND	0.0002
Manganese ~	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.0001
Nickel	mg/L	ND	ND	ND	ND	ND	ND	0.040
Selenium	mg/L	ND	ND	ND	ND	ND	ND	0.0050
Silver	mg/L	ND	ND	ND	ND	ND	ND	0.010
Zinc	mg/L	0.057	ND	0.054	0.054	0.059	0.051	0.170

* CONTINUOUS MONITORING

** HIGH MEDIAN MPN FOR EACH MONTH

ND - No Detection

~ 12 Month Running Average

**YUCAIPA VALLEY WATER DISTRICT
2000 Effluent Data
Monthly Average Values**

<u>Constituent</u>	<u>Units</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>MDL</u>
Flow	MGD	2.92	2.93	2.97	3.04	3.04	3.04	
Specific Conductance	umhos/cm	803	817	826	828	837	823	
pH *	Low/High	6.5/9.4	6.5/7.8	6.5/7.0	6.6/7.3	6.6/7.1	6.5/7.3	
Turbidity *	NTU	>5.0	>5.0	<2.0	<2.0	<2.0	<2.0	
Chlorine (residual) *	mg/L	>0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.10
Suspended Solids	mg/L	1.4	1.6	1.8	2	2	3	1.0
BOD	mg/L	1.5	1.5	1.3	2	2	2	2.0
COD	mg/L	22	27	28	26	22	29	3.0
Ammonia-nitrogen	mg/L	2.4	2.1	2.1	1.8	1.8	1.8	0.1
Coliform **	MPN/100ml	2	2	2	2	2	4	<2
Chloride	mg/L	86.7	82.7	99.4	101	102	83.5	5.0
Sodium	mg/L	85.9	82.4	87.5	88.3	81	84.9	5.0
Calcium	mg/L	52.7	48.3	50	47.3	51	51.4	5.0
Magnesium	mg/L	13.2	11.9	13.1	12.2	12.4	11.9	5.0
Carbonate	mg/L	ND	ND	ND	ND	ND	ND	10.0
Bicarbonate	mg/L	111	102	104	116	104	116	10.0
Sulfate	mg/L	43.5	43	47.2	52.8	51	47	5.0
Fluoride ~	mg/L	0.61	0.6	0.6	0.54	0.54	0.55	0.02
Boron ~	mg/L	0.32	0.35	0.35	0.34	0.34	0.34	0.003
Filtrable Residue ~	mg/L	525	483	486	486	484	492	10.0
Total Hardness	mg/L	172	168	168	177	175	172	0.50
Total Inorganic Nitrogen ~	mg/L	15.1	17.6	18.2	19.4	18.9	19.5	2.50
Nitrate	mg/L	18.8	21.6	23.6	23.4	20.8	17.4	0.50
Arsenic	mg/L						ND	1.0
Barium	mg/L						ND	0.020
Cadmium	mg/L	ND	ND	ND	ND	ND	ND	0.0050
Total Chromium	mg/L						ND	0.01
Cobalt	mg/L						ND	0.050
Copper	mg/L	ND	0.03	0.025	ND	ND	0.027	0.0250
Cyanide	mg/L						ND	0.01
Lead	mg/L	ND	ND	ND	ND	ND	ND	0.0050
Iron ~	mg/L	0.08	0.08	0.06	0.045	0.03	0.02	0.04
Mercury	mg/L	ND	ND	ND	ND	ND	ND	0.0002
Manganese ~	mg/L	0.002	0.002	0.002	0.0018	0.002	0.002	0.0001
Nickel	mg/L	ND	ND	ND	ND	ND	ND	0.040
Selenium	mg/L	ND	ND	ND	ND	ND	ND	0.0050
Silver	mg/L	ND	ND	ND	ND	ND	ND	0.010
Zinc	mg/L	0.05	0.054	0.053	0.043	0.059	0.056	0.170

* CONTINUOUS MONITORING

** HIGH MEDIAN MPN FOR EACH MONTH

ND - No Detection

~ 12 Month Running Average